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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/888,246	06/22/01	PARKS	J FR-6842-C

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HM12/1024

EXAMINER

BADIO, B

ART UNIT

PAPER NUMBER

1616

DATE MAILED:

10/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

# Office Action Summary

Application No.

09/888,246

Applicant(s)

PARKS ET AL.

Examiner

Barbara P Badio, Ph.D.

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other:

**First Office Action on the Merits**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Mack et al. ('248).

Mack et al. teach brominated diphenylalkane products having an average bromine number of at least about 6 and a Yellowness Index of about 0 to 8 (see the entire article, especially col. 1, line 44 – col. 2, line 32; examples 6-8 and 16). The reference also teaches (1) the preferred bromine number is about 9 (col. 4, lines 59-67); (2) presence of lower brominated homologs such as nonabromodiphenylalkane and octabromodiphenylalkane (col. 5, lines 3-8); (3) treatment of the brominated diphenylalkane product to reduce its particle size (col. 7, lines 38-41); (3) hydrolysable bromine contents below 1000 ppm (col. 7, line 58-61); (4) use of the brominated diphenylalkane products as flame retardant and (5) incorporating another flame retardant material such as antimony oxide (col. 8, lines 5-52; col. 9, lines 18-52). The products taught by the reference are encompassed by the instant claims.

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***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mack et al. ('248).

Mack et al. teach brominated diphenylalkane products having an average bromine number of at least about 6 and a Yellowness Index of about 0 to 8 (see the entire article, especially col. 1, line 44 – col. 2, line 32; examples 6-8 and 16). The reference also teaches (1) the preferred bromine number is about 9 (col. 4, lines 59-67); (2) presence of lower brominated homologs such as nonabromodiphenylalkane and octabromodiphenylalkane (col. 5, lines 3-8); (3) treatment of the brominated diphenylalkane product to reduce its particle size (col. 7, lines 38-41); (3) hydrolysable bromine contents below 1000 ppm (col. 7, line 58-61); (4) use of the brominated diphenylalkane products as flame retardant and (5) incorporating another flame retardant material such as antimony oxide (col. 8, lines 5-52; col. 9, lines 18-52).

Claims 1-4 differ from the reference by reciting a wet cake containing a predominant amount of decabromodiphenylethane and having an occluded free bromine content of from about 500 ppm to about 2000 ppm.

Claim 5 differs from the reference by reciting a product having a particle size of about 3 to about 5 microns and a content of about 700 to about 1000 ppm of occluded free bromine.

Claims 6 and 7 differ from the reference by reciting products not exemplified by the reference.

Claim 8 differs from the reference by reciting a bromine number of at least about 9.

Claim 9 and 16 further differ from the reference by reciting a mixture comprising decabromostilbene.

Claims 11-15 and 17-28 differ from the reference by reciting specific amounts/ratios of components.

However, the reference teaches (1) the average bromine number is at least about 9 (col. 4, lines 59-67); (2) achieving higher levels of decabromodiphenylalkane by using longer reaction times (col. 4, lines 64-67); (3) the presence of lower brominated homologs in the product (col. 5, lines 3-8); (4) treatment of the brominated product to reduce its particle size (col. 7, lines 38-41); (5) hydrolysable bromine contents below 1000 ppm (col. 7, line 58 – col. 8, line 3) and (6) in the combination of an inorganic compound with the brominated diphenylalkane, said is present in a ratio of about 1:1 to about 1:10 (col. 8, lines 36-40). Based on the level of skill of the ordinary artisan at the time of the invention and the teachings of the reference, the claimed invention would be prima facie obvious. The ordinary artisan in the art would be able to make the claimed product(s) having the limitations recited by the present claims based on the teachings of

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the prior art with the reasonable expectation that the products produced would be useful as taught by Mack.

5. Claims 5-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parks ('890).

Parks teaches a product predominant in decabromodiphenylalkane having less than about 1000 ppm unreacted bromine (col. 7, lines 8-11). The reference also teaches (1) the average bromine number of at least about 9 (col. 4, lines col. 6, lines 39-54); (2) a preferred product containing 85+ weight percent decabromodiphenylalkane (col. 7, lines 2-4) (3) presence of lower bromo homologs such as nonabromodiphenylalkane and octabromodiphenylalkane (col. 6, lines 49-51); (4) the use of the decabromodiphenylalkane product as a flame retardant in formulation with any flammable material including macromolecular material (col. 7, lines 28-51); (5) use of inorganic compounds such as antimony oxides and weight ratio of the decabromodiphenylalkane product and the inorganic compound from about 1:1 to about 7:1 (col. 8, lines 1-12) and (6) thermoplastic articles formed from the formulations produced by conventional methods such as molding (col. 8, lines 22-26).

The instant claims differ from the reference by reciting specific particle size, amounts of occluded free bromine, amounts of decabromodiphenylethane and ratio of decabromodiphenylalkane product and inorganic compounds such as antimony oxide. However, the reference teaches concentrations/amounts of decabromodiphenylalkane and decabromodiphenylalkane product to inorganic compounds that fall within the limits

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recited by the instant claims. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to make the product taught by Parks having the characteristics recited by the instant claims with the reasonable expectation that the product produced would be useful as taught by the prior art. Claim 5 further differ by reciting a specific particle size of about 3 to about 5 microns. The reference teaches the use of a grinder in the production of the decabromodiphenylalkane product (see col. 8, lines 65-68) and, thus, the ordinary artisan would have the reasonable expectation that the product produced would have reduced particle size. As the grinder utilized by the reference is similar to that disclosed in the present application (see page 13, #0047), the ordinary artisan would expect the particle size to be similar to that recited by the instant invention.

#### ***Information Disclosure Statement***

6. The information disclosure statement filed August 27, 2001 (copy of which was faxed to the examiner on October 18, 2001 at the request of the examiner) will be considered upon receiving the copies of the references from the parent case.

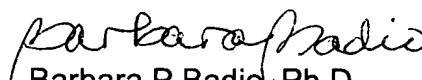
#### ***Telephone Inquiry***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara P Badio, Ph.D. whose telephone number is 703-308-4595. The examiner can normally be reached on 7:30am-4pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jose Dees can be reached on 703-308-4628. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

  
Barbara P Badio, Ph.D.  
Primary Examiner  
Art Unit 1616

BB  
October 19, 2001